

Using PHIN Messaging Standards to Develop an Implementation Guide for Cancer Reports from Anatomical Pathology Laboratories to Cancer Registries

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Overview

- Cancer Registry Community
- Cancer Registry Business and Data Flow
- Need for Standard Electronic Pathology Transmissions
- Mandate - E-Path Transmission Work Group
- Draft Implementation Guide
 - HL7 Messages/Segments/Tables
- Challenges
- Work to be Done



Cancer Surveillance Standards Setters

- American College of Surgeons - Commission on Cancer (CoC)
 - 1955 – Accredits Hospital Cancer Programs
- National Cancer Institute – Surveillance, Epidemiology, and End Results (SEER)
 - 1973 - 5 States, 6 Metro Areas with 14% population coverage
- Centers for Disease Control and Prevention – National Program of Cancer Registries (NPCR)
 - 1992 – Public Law 102-515



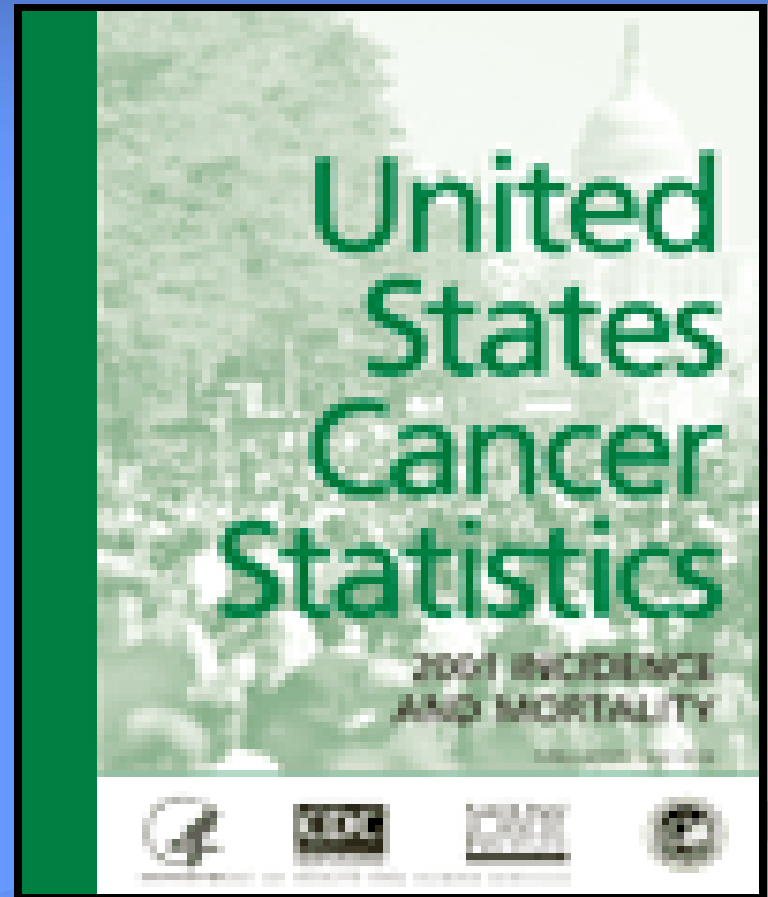
North American Association of Central Cancer Registries (NAACCR)

- Uniform data standards
- Education and training
- Certification
- Data aggregation and publication
- Promotion of cancer surveillance data use

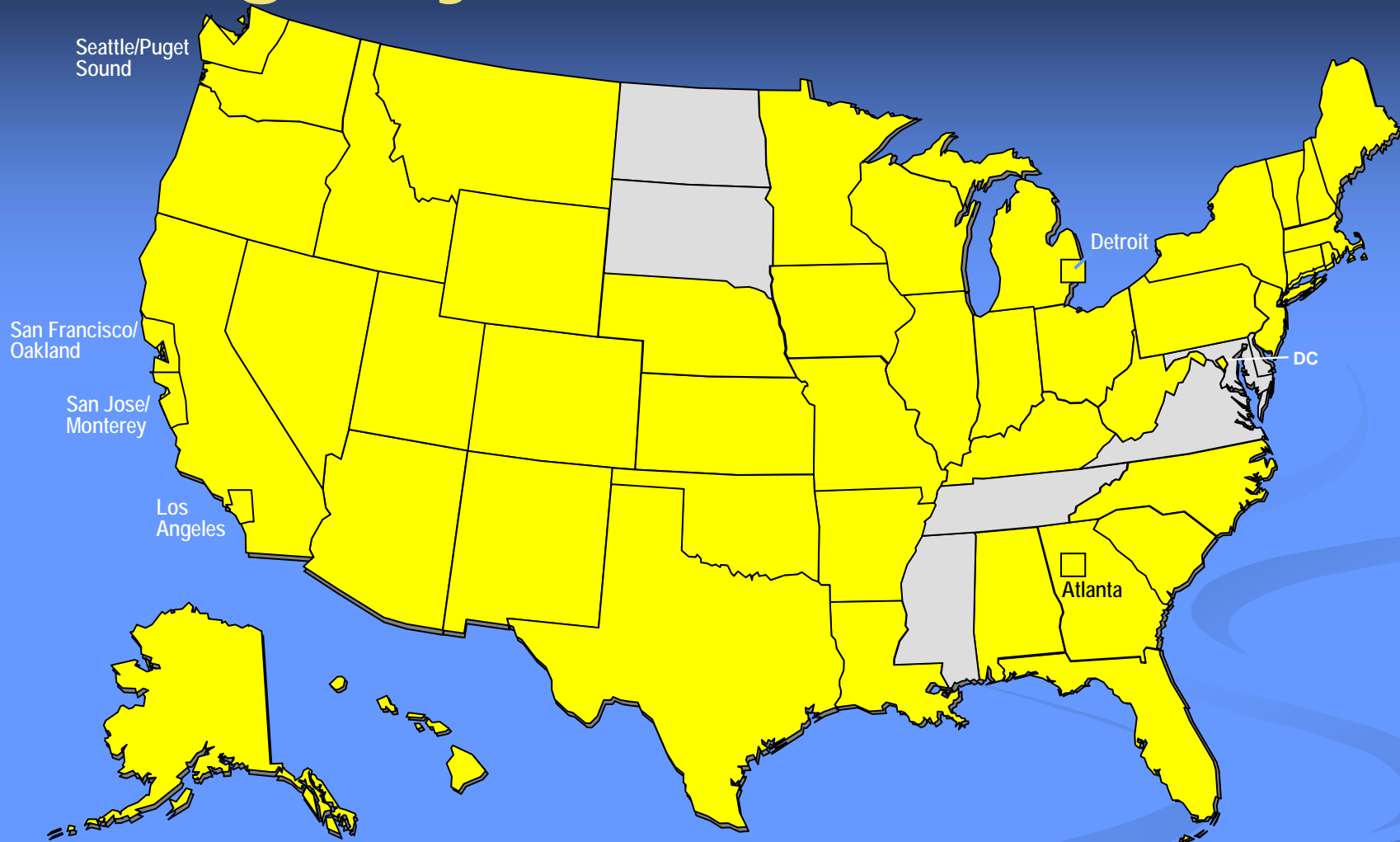


United States Cancer Statistics: 2001 Incidence and Mortality

- State, regional, and national data
- Covers 92% of US population for incidence, 100% for mortality
- Rates for whites, blacks, Asians/Pacific Islanders (A/PI), Hispanics, and children



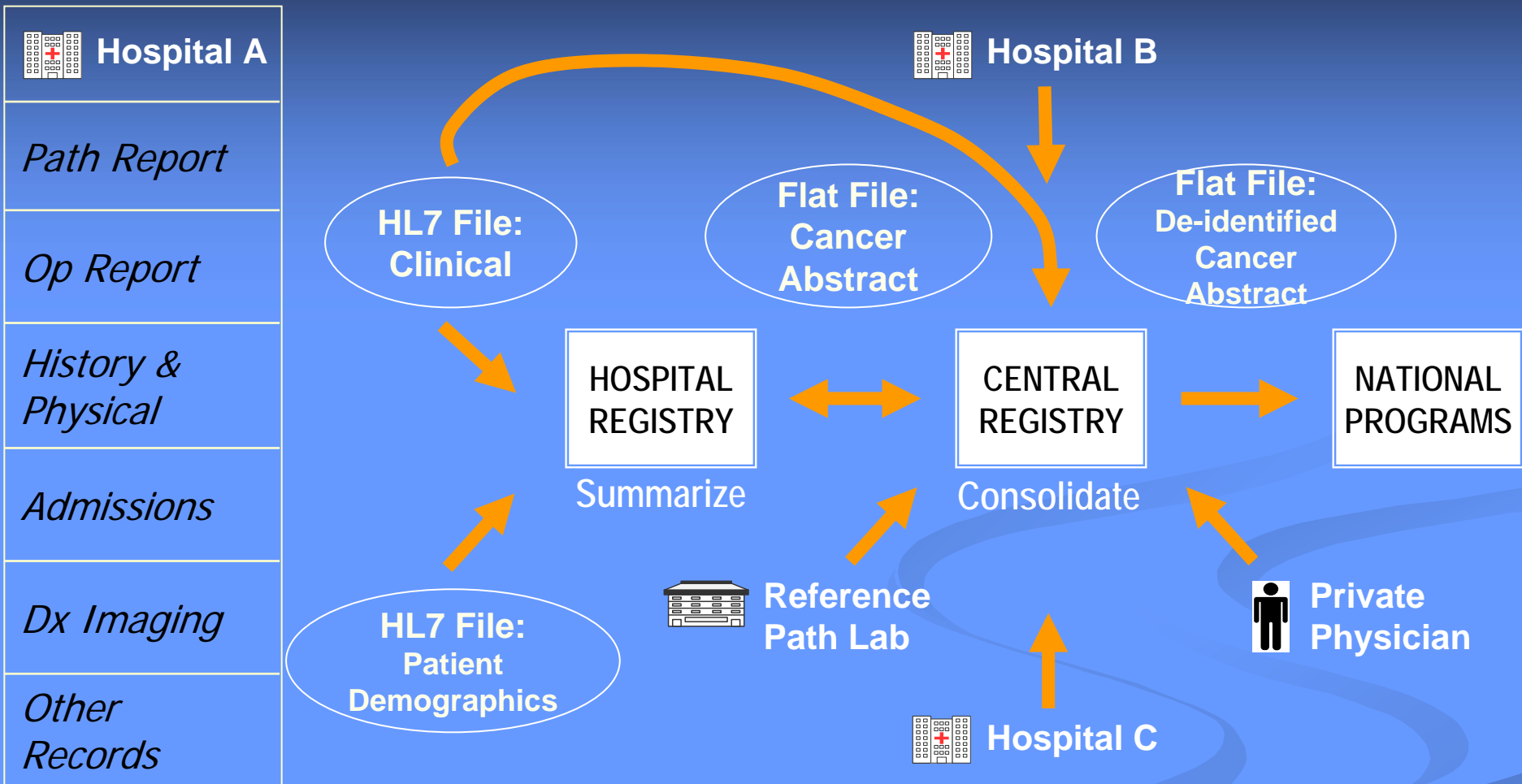
Registry Data in *USCS: 2001*



Registry contributing data



Cancer Registry Data Flow



| Report Identification | | Patient Information | | | |
|-----------------------|----------------------|---------------------|------------------------|----------------|------------------|
| Institution: | 3932 | Chart/MRN: | 00466144 | Address | 112 Broad Street |
| Pathology ID: | 97 810430 | SSN/SIN: | | | Apartment 10 |
| Report Date: | 2003-11-24 | Surname: | SAMPLE30 | City/Town: | ATLANTA |
| Report Type: | Correction | Given Name: | ALLEN | State/Prov | GA |
| Requester ID: | | Sex: | M | Zip/Post Code: | 30301 |
| Requester: | | Date of Birth: | 1953-06-21 | Country: | |
| Procedure Date: | 2003-09-22 | Age: | 50 (at procedure date) | | |
| Surgeon ID: | 163741 | Insurer: | USHC | | |
| Surgeon: | SURGEON, HANNAH | Insurance No: | 3270686987 | | |
| Pathologist ID: | 109771 | Race: | | | |
| Pathologist: | PATHOLOGIST , QUINCY | Ethnicity: | | | |



Clinical History: ? lymphoma Quick Section

Gross Pathology: The specimen is received fresh labeled lymph node. The specimen consists of two nodes 2.3 and 2.2. cm each. The cut surface is bulky tan to pink in color and fleshy.

Microscopic: Sections of left inguinal lymph node demonstrated an encapsulated node which is largely replaced by epithelioid granulomate without necrosis. Special stains do not reveal the presence of organisms. The background lymphocytes are both B and T lymphocytes and include macrophages and occasional neutrophils and plasma cells. Reed-Sternberg cells are not demonstrated.

Diagnosis: Consistent with peripheral T-cell lymphoma with epithelioid histocytes (Lennert's lymphoma), see description and comment - lymph node, left inguinal (biopsy from November 24, 2003)



NAACCR E-Path

- E-Path Committee – 1995
- Pathology Laboratory Guidance – 2000
 - Pipe-Delimited Flat File Structure with HL7 segments
 - Standard Pathology Laboratory Dataset
 - Data Dictionary



Format Table: HL-7 Location & Pipe-Delimited Flat File Location

| Data Item Name/Corres NAACCR Name | Field Requirement | Data Item # | HL-7 Location Name Field ID See HL-7 Note | Field Length | Flat File Field@ |
|--|-------------------|-------------|---|--------------|------------------|
| Record Type | S | 10 | Specified by Receiving Software | 1 | 1 |
| Path Version Number | S | 7000 | Specified by Translation Software | 6 | 2 |
| Path Facility ID Number (CLIA Number) | R | 7010 | BHS 4/Batch Sending Facility | 25 | 3 |
| Laboratory Name | R | 7020 | BHS 10/Batch Comment | 50 | 4 |
| Street | R | 7030 | BHS 10/Batch Comment | 25 | 5 |
| City | R | 7040 | BHS 10/Batch Comment | 20 | 6 |

Need for a new HL7 Standard Transmission Protocol

- 2000 HL7 standard out of date and incomplete (No MSH segments defined)
- Demand by cancer registries for E-Path reports increasing dramatically
- Path labs are already exporting E-Path reports using HL7 and ASCII formats
 - Proliferation of incompatible formats
- LabCorp approaches NAACCR and requests a HL7 standard for anatomical pathology laboratory reports



The NAACCR Mandate

- Define a NAACCR standard for HL7 anatomical pathology reports message" (May 2003)



NAACCR E-Path Transmission Work Group Membership

- NAACCR central office
- Central cancer registries
- Cancer registry software vendors
- Pathology lab system vendors
- Registry E-Path software vendors
- HL7 Technical support provided by CDC



NAACCR E-Path Objectives

- Define a standard E-Path HL7 format
- Explore ways to minimize costs to central registries
 - Shareable HL7 parser/translator
- Provide validation testing of HL7 messages



Building Upon Previous Work

- NAACCR Pathology Laboratory Electronic Reporting Guidance (Sept. 2000)
 - Pipe-Delimited Flat File Structure
- Electronic Laboratory Reporting (ELR) HL7 Implementation Guide (April 2003)
 - Produced by CDC for infectious disease reporting



Work Group Process

- Bi-weekly conference calls
 - Each HL7 message segment and element carefully scrutinized
 - Real pathology reports encoded in the HL7 message and evaluated



The Results: A Draft Implementation Guide

- Implementation Guide for Transmission of Laboratory-Based Reports to Cancer Registries using Version 2.3.1 of the Health Level Seven (HL7) Standard Protocol
- May be found on NAACCR web site: www.naaccr.org/
- Draft
 - Waiting for other work to be completed



What's in the Guide?

- Introduction
- HL7 Concepts
- Segment Definitions
- HL7 Batch Protocol
- Appendices
 - HL7 Sample Messages
 - Code Tables
 - Data Types
 - Summary Table



HL7 E-Path Message Segments

- Message Header (MSH) Segment
 - Message Control/Routing Information
- Patient Identification (PID) Segment
 - Patient ID and Demographics
- Next of Kin/Associated Parties (NK1) Segment
 - Optional for NAACCR
- Patient Visit (PV1) Segment
 - Provider information



HL7 E-Path Message Segments (cont.)

- Common Order (ORC) Segment
 - Pathology order information for all services requested
- Observation Request (OBR) Segment
 - Describes panel of tests that were ordered
- Observation/Result (OBX) Segment
 - Specific tests performed
 - Specific results for each test
- Notes and Comments (NTE) Segment



Other Implementation Guide Features

- Each segment specification begins with a table that lists the NAACCR item number and NAACCR required status
- Complete HL7 specification for each message segment
 - Guide includes definitions for fields not applicable to E-Path cancer reports
 - No missing HL7 field definitions



MSH|^~\&|HLS|HITECK PATH LAB-
ATLANTA^3D9328409^CLIA||STJ|20031124122230||ORU^R01|20031124122
2300023|P|2.3.1 <CR>
PID|1||97 810430^^^PI^HITECK PATH LAB-ATLANTA
&3D9328409&CLIA~00466144^^^PT^ST
JOSEPH'S&3932&CMA~3270686987^^^PN^US
HEALTHCARE||SAMPLE30^ALLAN||19530621|M|||112 BROAD STREET^APT
10^ATLANTA^GA^30301^ <CR>
PV1|1|||||ATTENDINGID^ATTENDINGDR^MANAGING|REFERRINGID^REFER
RER^FOLLOWUP^^^DR| <CR>
ORC|1|||||||||||||ATLANTA CANCER SPECIALISTS|STREET ADDRESS
1^SUITE #^ATLANTA^GA^30303<CR>
OBR|1||97810430|11529-5^SURGICAL PATH REPORT^LN^^PATHOLOGY
REPORT^L|||20030922|||EMPLOYEEID^PHLEBOTOMIST^PAMELA||||164341^
SURGEON^HANNAH^^^DR|||||||C||||||109772&PATHOLOGIST&QUINCY
<CR>
OBX|1|TX|22637-3^FINAL DIAGNOSIS^LN^^DIAGNOSIS^L|1|LEFT
INGUINAL LYMPH NODE - GRANULOMATOUS LYMPHADENITIS|||||F<CR>
OBX|2|TX|22637-3^FINAL DIAGNOSIS^LN^^DIAGNOSIS^L|1|/ljm <CR>
OBX|3|TX|^ ^^ ^Clinical History^L|2|? lymphoma Quick Section|||||F<CR>
OBX|4|TX|22633-2^Nature of Specimen^NS^^Tissue Submitted^L|3|Left
inguinal node|||||F<CR>



Minnesota HL7 Parser/Translator

- Has a system for the transmission of electronic pathology reports to Minnesota Cancer Surveillance System (MCSS)
- Converts HL7 path reports to the NAACCR delimited file format for processing by registry software
- HL7 message format based upon earlier version of the Draft Standard
- Written in Java
- Will be shared with registry community!



Challenges - Next Step

- HL7 learning curve for cancer surveillance team
 - TA: Mary Hamilton and Austin Kreisler
- What should be required?
- Proof of unknown
 - Required but empty
 - Required when available, if not available must contain "NA" or other value as defined in the segment definition



Challenges - Next Step

- Update the old NAACCR Pipe-Delimited Flat File Format
- Completion of Draft
 - Add specifications at component/sub-component level
 - Conformance Software – Messaging Workbench
- Checklist reporting and tissue banking
- Patient address for specimen only (Reference Labs)



Challenges - Next Step

- Ratification by NAACCR
 - E-Path Sub-committee
 - IT Committee
 - NAACCR Board
- Promote – to Pathology Laboratory vendors
- Nationwide Implementation in Labs and Registries



Thank you

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